Time Management Update
AMG-17
February 12, 1997

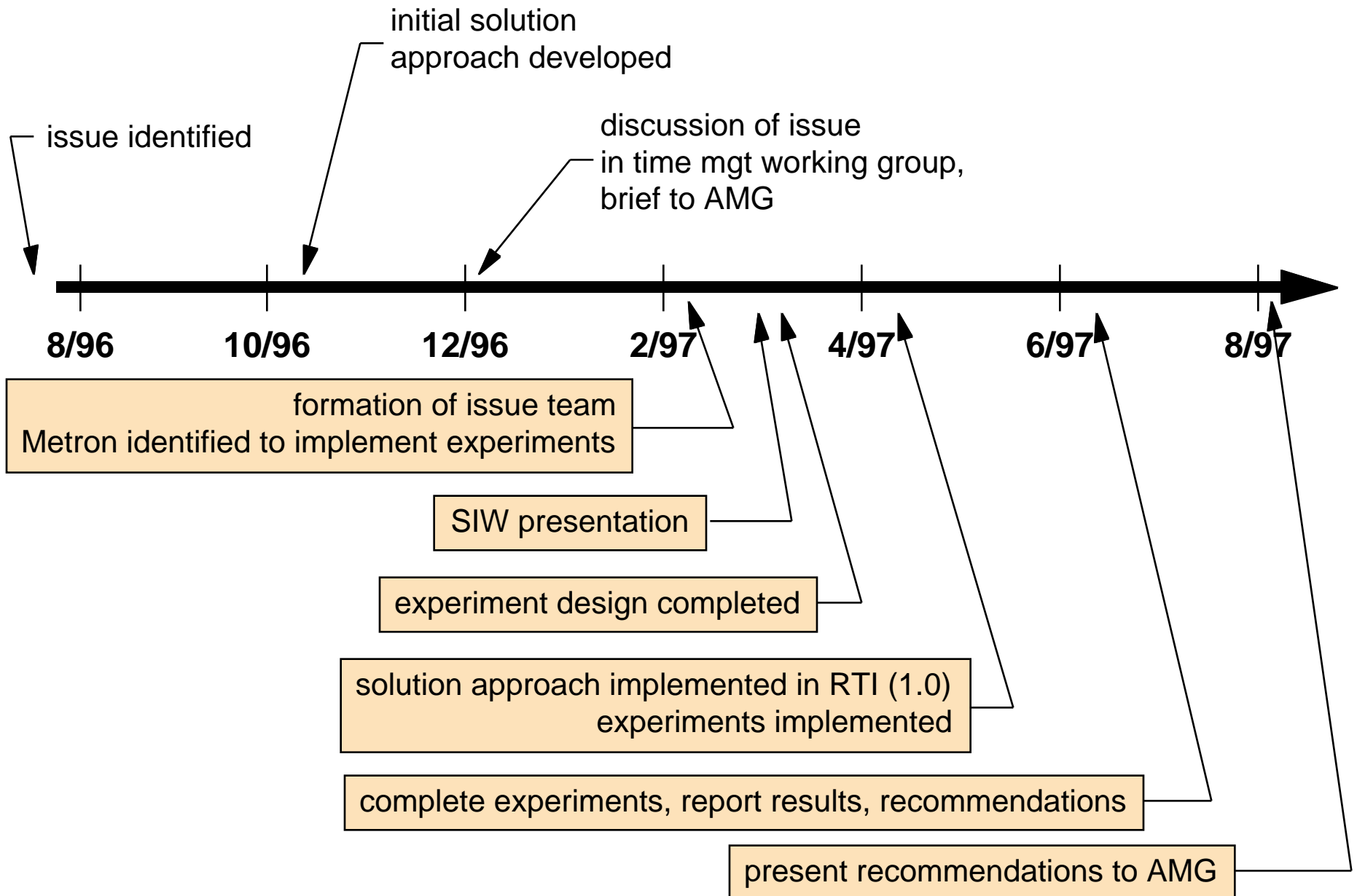Richard Fujimoto

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Issue Statement:
Zero Lookahead and Repeatability
(logical time federates)

- current HLA time management services
  - lookahead must be strictly positive (non-zero)
  - repeatability via federate ordering of simultaneous events
- protofederation experiments indicate zero lookahead should be allowed
  - allows exchange of time stamp ordered messages without advancing logical time
- allowing zero lookahead requires changes to services to support repeatable federation executions
- proposed approach:
  - allow zero lookahead
  - existing time advance services still deliver all simultaneous events
  - two new services enable exchange of zero lookahead messages
    Next Event Request Available, Time Advance Request Available
  - upward compatible with existing services

Evaluation Process: Milestones

initial solution
approach developed

discussion of issue
in time mgt working group,
brief to AMG

issue identified

8/96   10/96   12/96   2/97   4/97   6/97   8/97

formation of issue team
Metron identified to implement experiments

SIW presentation

experiment design completed

solution approach implemented in RTI (1.0)
experiments implemented

complete experiments, report results, recommendations

present recommendations to AMG

Issue Team
(tentative)

experiment development and evaluation
- Jeff Steinman

RTI development team POC
- Richard Weatherly

Issue evaluation team
- Richard Fujimoto
- Barry Justice
- Jack Ogren
- Les Parish
- Bill Stevens

Experiments

Goal: demonstrate repeatable, federate controlled ordering of simultaneous events with zero lookahead

Experimental platform: NSS running on 1.0

- Requirement: repeatable federation executions

  Experiment: stress test with many simultaneous events

- Requirement: allow zero lookahead

  Experiment: test repeatability and usability of zero lookahead primitives

- Requirement: Federation control of simultaneous events

  Experiment: test primitives to collect simultaneous events for functionality and ease of use

- Requirement: Avoidance of logical time creep (performance issue)

  Experiment: test performance as a function of lookahead